

76. The method of claim 75 wherein the step of multiplexing is performed by a selected one of an arrayed waveguide device, a diffraction grating device, a fiber Bragg grating device, or a thin-film interference filter.

77. The system of claim 39 further comprising a switch fabric communicatively coupled to the demultiplexer network.

78. The system of claim 77 wherein the switch fabric comprises an add/drop switch array comprising a plurality of input ports, add ports, drop ports, and output ports, the add/drop switch array operable to:

route wavelength channels from the input ports to the drop ports;

substitute wavelength channels from the add ports in place of the dropped wavelength channels; and

route wavelength channels from at least one of the input ports and the add ports to the output ports.

79. The system of claim 77 further comprising express lanes operable to communicate wavelength channels received from a demultiplexer network, wherein the multiplexer network is operable to receive wavelength channels from the switch fabric and the express lanes.

Respectfully submitted,

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